

What is claimed is:

1. A solid chelating resin comprising
  - a) a reactive hydrophobic backbone
  - b) pendent carbodithioic groups
2. The resin of claim 1 wherein said hydrophobic backbone is nucleophilic.
3. The resin of claim 1 wherein said resin is a poly(dithiocarbamate).
4. The resin of claim 3 wherein said resin contains no tertiary nitrogen groups.
5. The resin of claim 1 further comprising a cross-linking reagent reacted onto said reactive sites.
6. The resin of claim 5 wherein said cross-linking reagent reacts to form an alkylene, amine, ether, phosphine, sulfide, amide, urea, urethane, phosphoamidate, or thioamidate linkage.
7. The resin of claim 5 wherein said cross-linking agent comprises 4,4'-methylenebis (phenyl isocyanate) (MDI), polymeric MDI or polymethylene polyphenyl isocyanate (PAPI), tolylene 2,4, diisocyanate (TDI), isophorone diisocyanate (IPDI), terephthalic acid and its analogs, and adipic acid and its analogs.
8. The resin of claim 2 wherein said nucleophile comprises a C, N, O, P, S, or mixtures thereof.
9. The resin of claim 1 wherein said reactive hydrophobic backbone comprises a diamine, multiamine or a diol.
10. The resin of claim 9 wherein said reactive hydrophobic backbone comprises hexamethylenediamine (HMDA), diethylenetriamine (DETA), triethylenetetramine (TETA), tetraethylenepentamine (PETA), or a mixture thereof.
11. A process for producing a chelating resin comprising:
  - a) reacting a nucleophilic compound with carbon disulfide in a suitable solvent, to form a carbodithioic acid;
  - b) neutralizing said carbodithioic acid with a base to form a carbodithioic acid salt;
  - c) reacting said carbodithioic acid salt with a crosslinking reagent in a suitable solvent to form a solid chelating resin.
12. The process of claim 11 wherein said chelating resin comprises a (poly)dithiocarbamate

resin.

13. The process of claim 11 wherein said nucleophilic compound comprises an amine.
14. The process of claim 13 wherein said amine comprises a polyamine.
15. The process of claim 14 wherein said polyamine comprises polyethyleneimine polyamine.
16. The process of claim 11 wherein the molar ratio of carbon disulfide to reactive nucleophilic sites is from 0.1 to 0.9.
17. The process of claim 16 wherein the molar ratio of carbon disulfide to reactive nucleophilic sites is from 0.3 to 0.7.
18. The process of claim 11, wherein said reaction a occurs at a pH of from 7.0 to 13.0.
19. A process for removing contaminants from an effluent stream by contacting the effluent stream with the chelating resins of claim 1.
20. The process of claim 19 wherein said chelating resin is contained in a cylinder, a filter, a flow-through packet, or a cartridge.
21. A solid chelating composition comprising the solid chelating resin of claim 1 and at least one inert filler.
22. The composition of claim 21, wherein the weight ratio of filler to resin is from 0.10 to 0.90.
23. The composition of claim 21, wherein the weight ratio of filler to resin is from 0.30 to 0.70.